Comparison of serum level of HSP70 in mothers with complicated and uncomplicated preeclampsia

Abstract:

Background and Objective: Pathophysiology of preeclampsia has remained unknown. Excessive maternal systemic inflammatory response to pregnancy along with systemic oxidative stress is one of the underlying theories. Heat shock proteins (HSPs) are intracellular proteins which are expressed in cell during stress responses. In normal pregnancy, circulating HSP70 levels are decreased and it was suggested to be elevated in several pregnancy complications. The role of circulating HSP70 in normal and pathological pregnancies is not fully known. The aim of this study was to evaluate of serum Heat Shock Protein 70 (HSP70) in patients with preeclampsia and complications of preeclampsia.

Methods: This cohort study was performed on 80 patients with preeclampsia in Alavi hospital in Ardabil in 2017. These patients were followed up during the study until the end of pregnancy. Case group was patients with any of the complications (HELLP, Preterm labor, IuGR), and control group was patients without of complication.Serum HSP70 levels were measured using ELISA method in patients. Data were analyzed using SPSS software (version 19), independent t-test, and Mann-Whitney tests. P value less than 0.05 was considered significant.

Results: In this study, the mean of total gestational age in patients was 33.95 ± 3.54 (32.23 ± 2.88 in the case group and 36.66 ± 17.3 in the control group) and there was significance difference between the two groups. HELLP syndrome was seen in 3.3% of the patients and 20% had IuGR, 28% had preterm delivery and 45% had no complications. The serum level of HSP70 was 22.69 ± 11.72 in the case group and 14.77 ± 3.32 in the uncomplicated group. There was a statistically significant difference between two groups in terms of serum HSP70 level.

Conclusion: Serum HSP70 levels in patients with preeclampsia was higher than those with normal pregnancy. Serum HSP70 is not only be a marker for these conditions, it may also play an important role in pathogenesis of preeclampsia.

Keywords: HSP70, preeclampsia, ELISA